



NAME:

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PLEASE NOTE:

CASIO

- Questions must be answered on the question paper in the blocks provided.
- The teacher may explain the instructions to the learners.
- You may **not** use a calculator.
- Learners may write as individuals or pairs.
- Learners must print their names on the top of this paper.
- Have fun!



Please circle the correct letter for questions 1-10 and fill the answers in the blocks provided for questions 11-25. Each question is worth 1 mark unless stated otherwise.

1) What is

$$2 + 3 \times 7 - 6$$

- a) 29 b) 17 c) 5 d) 36 e) 41

2) Find the 10th number in the sequence 1; 4; 9; 16; 25;

- a) 28 b) 25 c) 49 d) 81 e) 100

3) Which is the greatest number?

- a) 0,085 b) 0,785 c) 0,870 d) 8,750 e) 7,780

4) A number multiplied by 7, gives an answer that is 5 more than 58. What is the number?

- a) 5 b) 6 c) 7 d) 8 e) 9

5) An old bicycle wheel has 21 spokes. How many spaces are there in between the spokes?

- a) 19 b) 20 c) 21 d) 22 e) 23

6) Which of the numbers below is **not** a prime number?

- a) 17 b) 51 c) 31 d) 23 e) 71

7) Joe writes down five numbers that have an average of 60. He then erases one of the numbers. The average of the remaining four numbers is 50. What number did Joe erase ?

- a) 40 b) 50 c) 60 d) 100 e) 200

8) Triangle A is an equilateral triangle with the length of each side being 1cm. Triangle B is an equilateral triangle with the length of each side 5cm. How many triangles of type A are needed to cover triangle B without overlapping?

- a) 25 b) 5 c) 15 d) 50 e) 30

9) The 5-digit number, 1CCC2, is divisible by 9. How many possible numbers does C represent?

- a) 1 b) 2 c) 3 d) 4 e) 5

10) 12 monkeys take 12 minutes to eat 12 bananas (eating at the same rate). How many monkeys would it take to eat 6 bananas in 24 minutes?

- a) 3 b) 6 c) 9 d) 12 e) 24

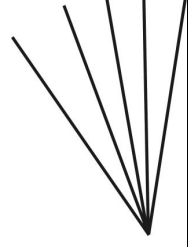
11) Arrange the digits 1,1,2,2,3,3, as a six-digit number where the 1's are separated by one digit, the 2's are separated by two digits and the 3's are separated by three digits. Find one possible solution (there are two).

12) If all the counting numbers are arranged in columns as shown below, under what column-letter will 200 appear ?

A	B	C	D	E	F	G
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	...	

13) The product of 2 numbers is 144 and their difference is 10. What is the sum of these two numbers ?

14) How many acute angles (angles between 0° and 90°) will be formed from the diagram below?

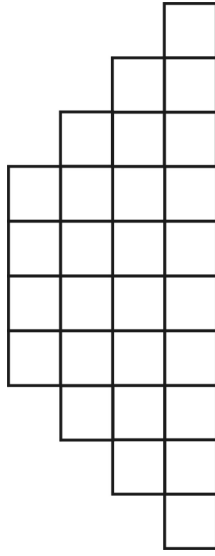


15) $3\frac{3}{4}\spadesuit = 4\frac{1}{2}\heartsuit$ and $3\spadesuit = 2\heartsuit$.

How many \heartsuit do you need to equal $15\spadesuit$?

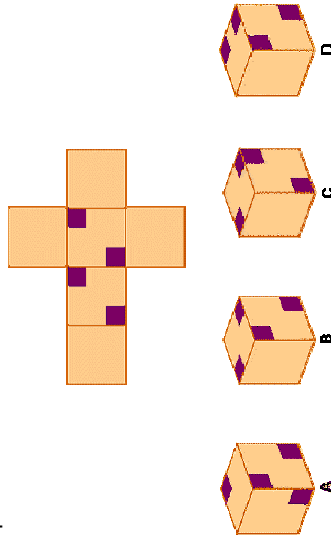
16) X and Y are two different numbers that are selected from the first fifty counting numbers. What is the largest value that $\frac{X+Y}{X-Y}$ can have?

17) How many squares are in the diagram below?



18) There are 12 pigs in a sty with enough food for 20 days. How many days would the food last if there were only 8 pigs in the sty?

19) When the net below is folded into a cube, which one of the choices below will match the folded-up cube?



20) Sam bought a fan for summer. The fan spins at a maximum speed of 40 rps (rotations per second) and is controlled by a 360 degree turning knob. Assuming the fan is currently spinning at 15 rps, how many more degrees would the knob have to be turned in order to increase the speed to 25 rps?

21) If

$$2^1 = 2$$

$$2^2 = 2 \times 2 = 4$$

$$2^3 = 2 \times 2 \times 2 = 8$$

Calculate: $2^{12} \div 8^4$

22) **ODD** is the sum of all the odd numbers from 1 to 99 and **EVEN** is the sum of all the even numbers from 2 to 98.

ODD = $1 + 3 + 5 + \dots + 99$ **EVEN** = $2 + 4 + 6 + \dots + 98$

What is the **difference** between **ODD** and **EVEN**?

23) \otimes is an alien maths operation. Below are examples of sums with their solutions.

$2 \otimes 5 = 29$ $3 \otimes 5 = 34$

$1 \otimes 6 = 37$ $3 \otimes 3 = 18$

What is the solution of $5 \otimes 5$?

24) If $\frac{1}{3} = \frac{1}{A} + \frac{1}{B}$ where A and B are different whole numbers, what is the value of A + B?

25) If $5 \nabla 2 = (5 \times 2) - (5 + 2)$, calculate $(3 \nabla 2) \nabla 2$

Paper written by Steve Sherman